



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

W. LYNDY TIPPETT  
SECRETARY

September 6, 2006

Memorandum To: J. J. Swain, Jr. P.E.  
Division Engineer, Division 13

From: Derrick W. Lewis, P.E.  
Feasibility Studies Unit Head

A handwritten signature in black ink, appearing to read "Derrick W. Lewis".

Subject: Preliminary Findings of Feasibility Study Re-evaluation of TIP I-4409

As requested, we are providing the preliminary findings of the re-evaluation of TIP project I-4409. The initial purpose of this re-evaluation was to consider Lytle Cove Road (SR 2724) as an alternative location to the previously recommended Blue Ridge Road (SR 2500) location. However during this re-evaluation, Transportation Planning requested analysis of a third alternative approximately half way between the Blue Ridge Road and Lytle Cove Road locations. The description and costs associated with the alternatives are described below.

**Alternative 1 (Blue Ridge Road):** This alternative proposes converting the existing grade separation into a partial cloverleaf interchange. Included in the costs below are the widening of SR 2500 (Blue Ridge Road) from US 70 to just south of the proposed interchange to a three-lane curb and gutter section, with 12' travel lanes on 100' right-of-way, the upgrading of SR 2500 from the proposed interchange to SR 1713 to 12' travel lanes and 8' shoulders (4' of which are paved) on 100' right-of-way, and the construction of a new bridge structure over the Swannanoa River.

It is anticipated that there will be thirty-three (33) residences and nine (9) businesses relocated due to this alternative. The total cost of this alternative, including construction and right-of-way, is estimated to be \$17,400,000.

Construction.....	\$9,600,000
<u>Right-of-Way.....</u>	<u>\$7,800,000</u>
Total Cost	\$17,400,000

**Alternative 2 (Lytle Cove Road):** This alternative proposes converting the existing grade separation into a diamond interchange. Included in the costs below is the widening of SR 2724 (Lytle Cove Road) from US 70 to SR 2726 to a three-lane curb and gutter section, with 12' travel lanes on 100' right-of-way and the relocation of SR 2725.

It is anticipated that there will be twenty (20) residences and five (5) businesses relocated due to this alternative. The total cost of this alternative, including construction and right-of-way, is estimated to be \$15,600,000.

Construction.....	\$8,400,000
<u>Right-of-Way.....</u>	<u>\$7,200,000</u>
Total Cost.....	\$15,600,000

**Alternative 3 - Option A:** This alternative proposes the new construction of a trumpet interchange on I-40, a one quadrant interchange on US 70, and a connector from I-40 to US 70. The proposed connector shall be a two-lane bridge structure with 12' travel lanes on 150' right-of-way.

It is anticipated that there will be three (3) residences and four (4) businesses relocated due to this alternative. The total cost of this alternative, including construction and right-of-way, is estimated to be \$30,600,000.

Construction.....	\$26,400,000
<u>Right-of-Way.....</u>	<u>\$4,200,000</u>
Total Cost.....	\$30,600,000

**Alternative 3 - Option B:** This alternative proposes the new construction of a trumpet interchange on I-40, a two-quadrant interchange on US 70, and a connector from I-40 to SR 2435. The proposed connector from I-40 to US 70 shall be a two-lane bridge structure with 12' travel lanes on 150' right-of-way. The proposed connector from US 70 to SR 2435 shall be a two-lane shoulder section, with 12' travel lanes and 8' shoulders (4' of which are paved) on 100' right-of-way.

It is anticipated that there will be five (5) residences and seven (7) businesses relocated due to this alternative. The total cost of this alternative, including construction and right-of-way, is estimated to be \$33,400,000.

Construction.....	\$27,800,000
<u>Right-of-Way.....</u>	<u>\$5,600,000</u>
Total Cost.....	\$33,400,000



This re-evaluation is limited to feasibility study design, traffic operational analysis and costs associated with these alternatives. This work is preliminary and not a product of comprehensive environmental or design evaluations. Transportation Planning will evaluate the environmental impacts associated with these alternatives during their update of the French Broad River MPO Comprehensive Transportation Plan. Our traffic analysis will not be complete until we receive the traffic projections for this project.

### **Preliminary Findings**

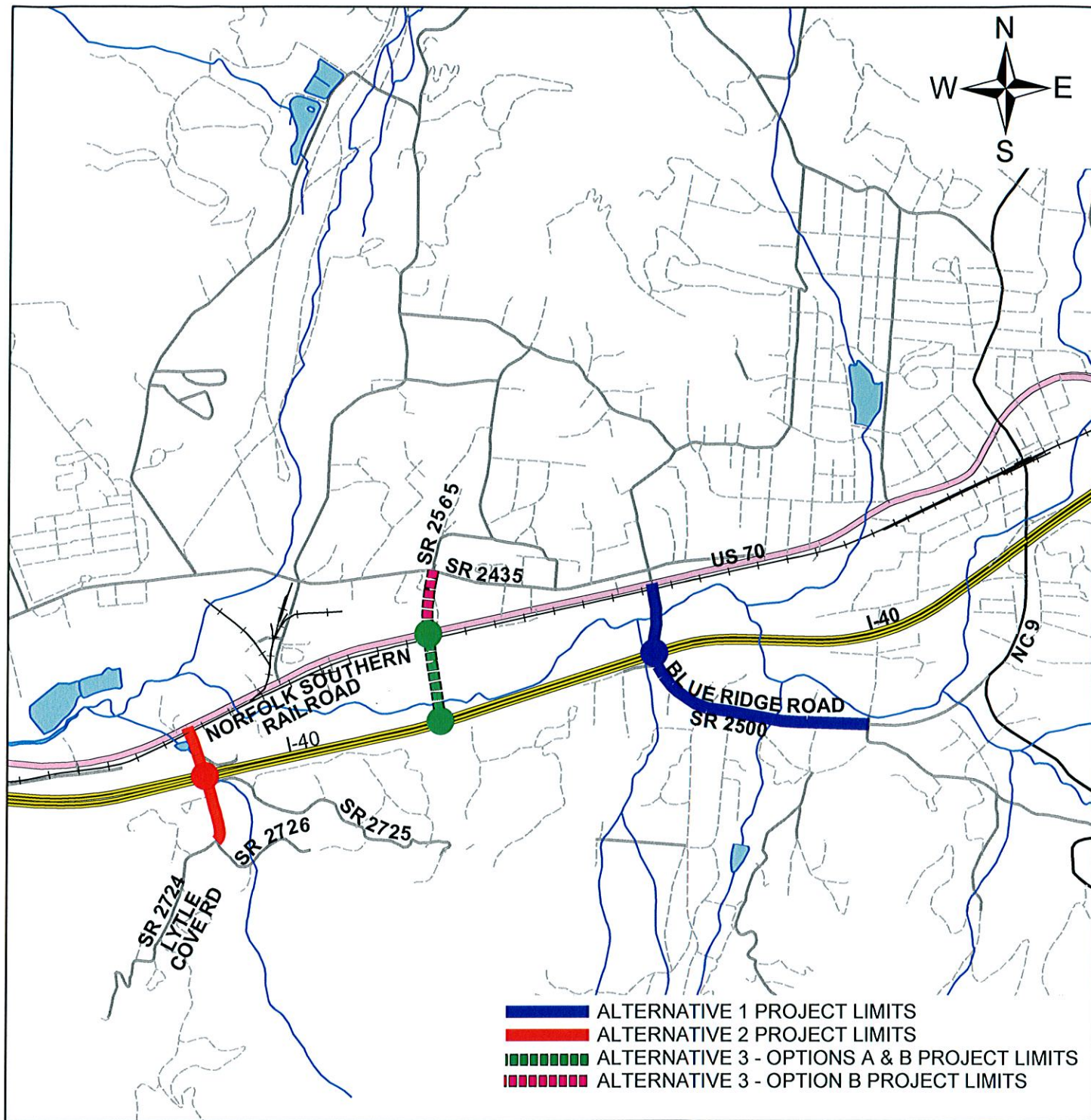
Based on the limited information available, **we do not consider an interchange at Lytle Cove Road to be an acceptable alternative because of traffic safety and operational concerns with inadequate spacing between I-40, US 70 and the railroad.** While the other alternatives are still considered feasible, both Alternative 3 Option A and Option B have increased environmental permitting concerns because of the new crossing of the Swannanoa River and its floodway, and are significantly more expensive than Alternative 1 at Blue Ridge Road. While environmental permits are also anticipated on Alternative 1, upgrading the existing Blue Ridge Road crossing of the Swannanoa River should be less of a concern than providing a new crossing. . Given the limited information available, **it appears that Alternative 1 is still the most cost effective and practical improvement for this project.** Once the projected traffic volumes are received, we will analyze the alternatives, verify that they function acceptably, ensure there are no adverse operational impacts to I-40, and validate the preferred alternative.

If you should have further questions or additional information is needed, please do not hesitate to contact Lynnise Hawes or myself at 733-2039.

DWL/dl&lh

ATT: Project Map

cc: Alan Thornburg, Member, Board of Transportation  
Calvin Leggett, P.E.  
Al Avant  
Van Argabright, P.E.  
Mike Bruff, P.E.,  
Alena Cook, P.E.



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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
PROGRAM DEVELOPMENT BRANCH

I-4409REV

I-40/SR 2500 (BLUE RIDGE ROAD) & I-40/SR 2724 (LYTLE COVE ROAD)  
COMPARE FOR A POTENTIAL NEW INTERCHANGE LOCATION

BLACK MOUNTAIN, BUNCOMBE COUNTY

DIVISION 13

FIGURE 1